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ABSTRACT

This paper summarizes the purposes, history, and funding history of the curriculum development program which is Part I of the Vocational Education Amendments, describes the major categories of the program effort, and offers recommendations for the future of the program. Problems in career development and management at the national level which have served as one basis for decisions about the Part I program are identified. In the historical summary of the program, the following topics are covered: Funding mode, the curriculum development branch, nature of funding awards, establishment of priorities, funding procedures, alternative funding modes, and monitoring of Part I projects. Brief descriptions of the 15 major occupational cluster curriculum projects funded under Part I appear with a table showing the distribution of Part I funds by occupational cluster for fiscal years 1971-1974. Recommendations for the future of the program are included. (NJ)

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CURRICULUM DEVELOPMENT IN VOCATIONAL-TECHNICAL EDUCATION: The Part I Program

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Part I of the Vocational Education Act of 1963, as amended, authorizes the Commissioner to make grants or contracts with colleges and universities, State Boards, and other public or nonprofit private agencies and institutions. No matching funds are required. The purposes are to:

1) promote the development and dissemination of vocational education curriculum materials;

2) develop standards for curriculum development;

3) coordinate State efforts and prepare current lists of available materials;

4) survey curriculum materials produced by other agencies of Government;

5) evaluate materials and their uses;

6) train personnel in curriculum development.

Most of these activities are carried out through individual projects developed in response to formal Request for Proposals. In addition, seven State curriculum centers function as a national network for curriculum coordination and have been funded to provide inter-state curriculum liaison services.

The following table summarizes the funding history of the Part I, Curriculum Development program, which has been a critical factor in program development and quality control in vocational-technical education.

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TABLE I

Funding history Part I, Curriculum Development, Vocational Education Amendments of 1968.

YEAR	AUTHORIZATION	APPROPRIATION
1969	$ 7,000,000	$ -0-
1970	10,000,000	880,000
1971	10,000,000	4,000,000
1972	10,000,000	4,000,000
1973	10,000,000	4,000,000
1974	10,000,000	4,000,000*
1975	10,000,000	1,000,000

* Release of an additional $2,000,000 brought this figure to $6,000,000.

History of Part I Program

Although funding of Part I was authorized in 1969, no monies were appropriated to its purposes in that year. The first funding of the Part I program was in 1970, when $880,000 were appropriated.

Release of Part I funds in fiscal 1970 was in the spring, too late for the competitive funding procedures of preferred practice. Hence, funding of projects was on a sole source basis. Serveral projects to give impetus to the development of career education were funded, as well as curriculum development in the occupational clusters of communications media; construction; manufacturing; public services; recreation, tourism, and hospitality; and transportation.

The staff of the Curriculum Development program in the Office of Education consisted of one professional person who, fortunately, was a curriculum development specialist. Assistance in monitoring projects was provided by O.E. specialists in the technical areas addressed by the curriculum development efforts.

In 1971, a Curriculum Center was instituted in the Bureau of Occupational and Adult Education. The staff consisted of a director, four professionals detailed from other programs in the Bureau and a part-time secretary who later became a full-time secretary and eventually, a junior professional in the program. For the period of a year, the staff was augmented by four EPDA fellows from U.C.L.A., each serving for a three-month period.

Essential to effective communication among staff members and with the vocational education community were common understandings regarding such terms as curriculum and curriculum management. Hence, an early staff activity was achieving agreement on definitions.

The term, curriculum, for purposes of program operation, was defined as "a plan for a teaching-learning experience consisting of objectives, content, learning experiences, teaching aids, and means of evaluation." Curriculum management was conceived as including decision-making, planning, and implementation with respect to: development of curricula; diffusion and dissemination of curricula; basic work in the foundations of curriculum development; and the coordination of curriculum effort with developments in educational technology and the systems of delivery and administration."

Rationale for the emerging national curriculum center was based on the assumption that the curriculum is central to educational effectiveness and that through curriculum management major educational breakthroughs could be achieved.

National Problems in Curriculum Development and Management

The following problems in curriculum development and management at the national level were identified. These have served as one basis for decisions about the Part I program.

1. There had been no comprehensive state-of-the-art study of curriculum development in vocational-technical education. It was difficult to get a national picture of the status of curriculum development in the field. A few limited studies of curriculum materials threw some light on the subject.

2. Curriculum efforts in vocational-technical education were uncoordinated, although it was clearly apparent that much curriculum work was being done in a variety of places by various individuals and agencies.

3. The total effort in curriculum development was "spotty." Some aspects of vocational-technical education were receiving much attention, some little or no attention. The quality of curriculum work varied greatly.

4. Few curriculum materials were available which were based on the expanded concept of preparation for the occupational role emobdied in the term, "career education."

5. Little attention had been given the relative effectiveness of the processes of curriculum development. In the curriculum work of the field, most of the attention had centered on the end product, that is, the curriculum guide. Limited attention had been accorded process in relation to a particular desired product. Comparisons of process, as well as comparisons of various forms of product, were, for the most part, lacking.

6. Insufficient attention had been given bases for curriculum decisions other than task analyses of the occupation. The value bases on which curriculum decisions were made were rarely stated, if indeed these were at all in the awareness of the curriculum developers.

7. Many curriculum guides in use had not been validated through rigorous testing. They were simply written by specialists in the field with the hope that they would prove effective. Or, they were shaped by the textbooks available in a given field -- hence, were "after thought" rather than "forerunner" with respect to student materials.

8. Fast developing technology of education presented new challenges to curriculum developers in vocational-technical education. With the developing educational technology, curriculum guides adapted to cable TV, CAI, audio-video cassettes, etc. are in demand. Such materials are needed for classroom, industry-based and in-home study. But, specialists in the technology of education reported a dearth of appropriate curriculum materials.

9. Although some attention had been given curricula for those with special needs, such as the handicapped, disadvantaged, and gifted, greater efforts were needed.

10. Dissemination of curricula for vocational-technical education was a major problem. Curricula were developed and guides printed -- then, most were implemented in only one or two situations -- or worse simply gathered dust on the shelf.

11. Little attention had been given to how and where curriculum materials were used (and whether they were used) when they were made available. Questions of relationship of format and style to utility were rarely asked.

12. In teacher education programs, some emphasis was given the procedures of curriculum development, but little attention was focused on how to select and adapt curriculum materials already available.

13. Typically, curriculum development courses in universities gave attention to development of curriculum materials but not to the problems of curriculum management.

These were the national problems in curriculum development in vocational education identified in 1971. Considerable progress has been made toward the solution of the problems, but there is still a long way to go.

Funding Mode

In 1971, competitive procedures were instituted and applied with respect to several major curriculum efforts despite the severe constraints of late release of funds, limited staff, and no budget whatever for proposal evaluation panels. Beginning with fiscal 1972, the program has used competitive procedures and contract, rather than grant awards, almost exclusively. Funds to support the use of outside review panels were provided. A few sole source (i.e., non-competitive) awards were made after review and approval by a sole-source board established by the Contracts program of the agency.

The Curriculum Development Branch

With the development of a Division of Research and Demonstration in the Bureau, the Curriculum Center became a Curriculum Development Branch in 1973. Staffing consisted of a branch chief, who was a curriculum development specialist, two additional curriculum development specialists, a junior professional with a relatively long record of service in the agency, a specialist in teacher education, and a specialist in guidance. Later, the guidance specialist was transferred to the Research Branch of the Division and a specialist in elementary education transferred to the Curriculum Development Branch.

Several consultants from the field served in the program for varying lengths of time. These were in the areas of agricultural education, consumer education, and audio-visual instruction. Additionally, several university fellows helped to augment the small staff.

Nature of Awards

Since the beginning of the program, most Part I projects have been full-funded, so that the duration of projects funded in any given year varies considerably. For example, in FY 1974, awards ranged from 12 - 48 months in duration.

As Sinding stated in a statistical profile of the Part I program, "Not suprisingly, the heavist concentration of awards has been for the support of materials development and dissemination." Her report shows that, of 104 projects funded, 70 were for this purpose.[1]

Projects funded since the beginning of the Part I program fall into seven major categories:

1. Vocational curricula, with emphasis on:
   a. occupational clusters.
   b. bases for curriculum decisions.
2. General career education curricula.
3. Curricula for emerging and expanding occupations at the postsecondary level.
4. Curricula for groups with special needs.
5. Training curriculum development personnel and familiarizing teachers with curriculum packages.
6. National network for curriculum coordination.
7. Curriculum materials available from government agencies.

Establishment of Part I Priorities

Priorities for funding of Part I projects were established in fiscal 197! primarily in terms of the identified national problems in curriculum development in vocational-technical education with appropriate administrative approval. Later, priorities have been determined through procedures established for all programs in the Division of Research and Demonstration.

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[1] Sinding, Monica, "The Part I Program of Support for Curriculum Development - a Statistical Profile," Committee on Vocational Education R&D, National Research Council, June, 1975, p.2.

These involve inputs from the directors of the curriculum centers in the National Network for Curriculum Coordination, the Research Committee of the State Directors (of Vocational Education) Association, the directors of state Research Coordinating Units, Regional Office and Washington Office of Education vocational education personnel, and the American Vocational Association. With the benefits of advice of these groups, tentative priorities are established, dollar amounts assigned to the efforts following "costing out" procedures, and the required approval of several layers of Office of Education and DHEW Administration sought. With such approvals, with the Deputy Commissioner for Occupational and Adult Education and the Commissioner of Education playing key roles in the approval process, program personnel in the branch have a signal to move ahead with preparation of "request for proposals" for the approved efforts.

The involvement of many in the field of vocational education in the priority-determining process would seem to ensure the likelihood of the resulting curriculum products being acceptable to the field. On the other hand, the sifting and re-sifting of proposed efforts tends to eliminate those deemed "risky" and these are frequently the most creative and innovative. The procedures employed are safe but somewhat unlikely to lead to significant curriculum breakthroughs. That some quite creative efforts have survived is perhaps a tribute to the stubborn insistence of a few dedicated individuals rather than to the system.

Funding Procedures

After Part I priorities are determined, the staff of the Curriculum Development Branch share in determining responsibility for each effort. Responsibilities are assigned in terms of professional training, experiences and interest. Considerable research is needed in the preparation of the work statements for some RFPs (requests for proposals.) It takes about the same amount of time to prepare any such work statement as may be involved in the writing of a proposal for the effort.

A work statement usually requires a number of approvals at various administrative levels before it may be incorporated in the formal RFP. The RFP package is the responsibility of personnel in the Grants and Procurement Management Division. A Contracts officer, assigned to a specific effort, works with a program officer in seeing the effort through from RFP to the awarding of a contract, and beyond, to the monitoring and to evaluation of the completed effort.

The Contracts officer sees that the RFP is announced in the Commerce Business Daily. This publication serves to make known to the interested world that a given effort is to be undertaken and that proposals for this work may be submitted at a given time and place.

Additionally a list of potential contractors with special capability to perform a given piece of work may be submitted to the Contracts officer by his or her Programs counterpart. This list will include all of those known to have such special capabilities. Those on the list are sent a copy of the RFP. This is to make certain that those with the special capability to perform receive a copy. Anyone else may request a copy; such requests must be in writing. The written request may be and frequently is hand carried to the agency.

Much time of the program officers in the agency is spent with persons who want information about a given program, what it has funded, and what it may fund. Program personnel are required to maintain absolute secrecy with respect to RFPs to be issued. However, they may give information regarding the board thrusts of the program. It may be reliably stated that the Part I staff is probably as discreet regarding priorities and other confidential programmatic information as any in the entire government.

Proposals in response to the RFP are submitted to the Contracts officer. They must be received by the "due date" in order to be considered in the competition for contract award. Program people do not have access to these proposals; indeed, they have no knowledge of the number of proposals nor of who is submitting until the review panel convenes -- unless a representative of an institution or agency submitting chooses to tell them.

For each RFP, a panel of qualified persons to review proposals and make recommendations regarding those that are "technically acceptable" is selected. Criteria for panel members relate to the specific efforts. For example, if the RFP is for development of curricula for a given occupational cluster, specialists in that occupational field and in the process of curriculum development would be on the panel. Each Part I panel includes at least one woman and at least one representative of an ethnic or racial minority group. The usual number of panel members is five. Panels are approved by the Deputy Commissioner and the Contracts officer.

The program officer must ascertain that no panel member has a "conflict of interests." In one instance, a year or so ago, after the panel was convened, it was determined that a given panel member might be considered to have a possible conflict of interest; she was eliminated from the panel. The ensuing embarrassment to all concerned was sufficient to result in even more careful checking to determine any possible perceived or real conflict of interest.

It is apparent that the criterion of no "conflict of interest" eliminates many well-qualified persons from review panels. Anyone who might reasonably be expected to submit a proposal is automatically disqualified. Of course, this would include specialists in the field who would otherwise make excellent reviewers. So, when people say, "Why wasn't specialist so-and-so on the review panel?" there's a reason! He or she was probably considered to have a possible conflict of interest!

Usually three days are set aside for panel review of proposals. The panel is briefed on the total effort, the work statement is studied, and criteria developed by program personnel and approved by the Grant and Procurement Management Division are reviewed. Each panel is chaired by the program person responsible for the effort - unless he or she is considered to have a possible conflict of interest. In one instance, the Curriculum Development Branch chief was replaced as panel chairperson by the chief of the Demonstrations Branch because the former had presented a proposal for a similar effort to the Sole Source Board and the professional organization seeking sole source funding (which had been denied) had submitted a proposal in response to the RFP.

Proposals are read by panel members and evaluated against the established criteria. They are ranked and a "cut-off" point with respect to technical acceptability is determined. Each panel member has done individual ratings and has made notes regarding how each proposal rates in relation to each criterion; this is in preparation for the group discussion and composite ratings. All notes, individual ratings, group ratings, and statements of reasons for final choices are submitted to the Contracts officer along with the sets of proposals.

A conference between the Contracts officer and the Program officer is now held. Contracts reviews the conclusions of the panel to determine whether some important consideration has been overlooked. Panel members have reviewed the technical proposal minus budget so they would not be swayed by budgetary considerations in considering quality of the proposals. Now, budgetary factors are added. A budget that is completely out of line and incapable of appropriate revision might be cause for elimination of the proposal. A budget that is too low might suggest that the offeror does not appreciate the magnitude of the effort. A budget that is too high may be beyond the allocated resources. However, in many instances, even a high or low budget will not completely eliminate an offeror at this point.

At long last, those proposals that are technically acceptable or capable of being made technically acceptable without major revision and

budgetarily within reason (or capable of being made so) have been determined. No specific number is sought. However, the number is somewhat proportional to the number received. If 30 proposals are received, the number deemed technically acceptable or nearly so is likely to be around 8-10.

Contracts informs each offeror of these proposals that his or her proposal is still under consideration. He or she then schedules a conference, in person or by telephone, with the Contracts and Programs officers together in order to gain clues as to how the proposal may be made more acceptable. This conference is often a fascinating study in oblique communication. The program officer usually takes the initiative in asking questions which suggest needed clarification and revision. The officer may not direct or advise.

A due date for answers to the questions and for revision of budget or other parts of the proposal is set. After all final offers are received, the Program officer re-ranks the proposals and writes a statement of reasons for choice and for rejections. These are submitted to Contracts. The successful offeror is notified of the choice as are those who have not been successful.

It is not surprising that final choices may be made against the July 1 deadline of close of fiscal year! The procedures outlined in the foregoing paragraphs assume that every thing moves along in prescribed fashion with no hitches. Such is not always the case. In one instance, an individual requested a copy of an RFP. He received it after the due date had passed. His protest resulted in lengthening the period for submission by several weeks, which had to be announced in the Commerce Business Daily. Fortunately, there was sufficient time to allow for the extension.

In another instance, an offeror protested the choice made. He was given a hearing before the head of the relevant office of the Grant and Procurement Management Division and program officers concerned with the effort. The interesting finding was that his secretary had omitted the entire management plan from his proposal. This came to light during the discussion. He wrote a letter withdrawing his protest.

After a final choice is made, the contract is finalized with the Contracts officer taking the lead in negotiations. Decisions must be made with respect to such matters as individual budget items and dates for progress reports.

Alternative Funding Modes

Thus far, in this report, attention has been given the RFP competition-contract mode of funding. By far the largest proportion of Part I funding activity has been in this mode. However, as in almost every other government program, some Part I funding may be through the Small Business Administration or in the "sole source" mode.

To support the development of small business, minority-operated firms, most agencies contract with SBA for some pieces of work for which the agency then contracts with an approved small business firm. Part I program staff members were directed, in fiscal '73, to go this route with some of the curriculum efforts.

In preparing for one major effort, the then branch chief reviewed folders describing the capabilities of some 200 firms -- all of those whose papers were then on file in the Grants and Procurements Administration Office. Approximately nine appeared to have some capability and interest in curriculum development and in education for work. Further examination of the papers and discussion with SBA officials narrowed the list to four. Criteria for selection of the firm were established and approved by the Contracts officer. The four firms were contacted and their representatives were interviewed by the Programs officer with a Contracts person present. The firms were rated against the established criteria. One clearly emerged as appearing to have greatest capability. Contracts checked on the financial standing of the firm to ascertain ability to handle the effort. Approval to proceed was given by Contracts.

Then, a work statement which had been prepared previously for this SBA-designated effort was given the selected firm. The firm prepared a proposal for the project which had to be approved by Program and by Contracts before award of contract. Similar procedures were followed in other instances.

With respect to sole source, very few awards are now made in this manner. Rarely, an unsolicited proposal may be submitted to the agency by an organization that appears to have unique capability to perform a programmatically significant activity. Approval from the Deputy Commissioner is required in order to proceed with funding effort. With his approval, a sole source justification is written. This gives some history of the proposed effort and indicates reasons for funding. The sole source justification statement and copies of proposals if they exist* are then sent to a

* A "sole source" proposed effort may be taken to the Sole Source Board at the idea stage.

"sole source responsible" person in Grants and Procurements who convenes a Sole Source Board to review and act on the question of sole source contracting. The Board consists of selected members of O.E. staff and is chaired by a member of the Grants and Procurement staff. For the most part, Board members are persons who have had experience with grants and contracts procedures. They are expected to exhibit objectivity in determining the validity of the "sole source case" and to consider the compatability of the proposed effort with O.E. goals and programs.

Board members have a copy of the agenda - cases to be considered - and a packet for each proposal including statement of justification and project proposal or description of proposed effort before they convene. The Board meets at regular intervals - usually once a month; however, for special cases or near the end of the fiscal year "call meetings" may be held.

Appearing before the Board, a Programs officer, in a sense, is advocate of the proposed effort. He or she is asked to describe the proposal and is then closely questioned regarding the proposal and the capability of others to perform the same work. Sometimes the Program officer feels strongly that a given proposal should be funded on a sole source basis. In some cases, the Program representative may believe that it is in the best interests of the program to fund a given proposal on this basis because of apparent unique capability and because the work is needed in the field, and to go the RFP route would delay the effort by months. A Programs person may leave a Board session feeling like a Master's student after his or her first "orals!"

Realistically, a proposal has a better chance with the Board if there is support from "on high." A Deputy Commissioner may choose to accompany the program representative to a Board session. His presence does not go unnoticed.

On one proposed effort, word was out that the idea was favored at the highest levels. No written proposal was presented. The Program officer making the presentation was unenthusiastic and, in fact, had some struggle with her conscience. She had been directed to prepare the sole source case. She verbalized her doubts to several in positions of greater authority. One of her main concerns was that the proposed effort was in an area more appropriate to another program.

Two officials high in the O.E. hierarchy appeared with her. The effort was approved, but not unanimously. It should be noted that the obvious administrative push given this proposed effort is now unusual.

In another instance, a Programs representative believed that the sole source justification was particularly strong. An advocate from the Department of Labor appeared with her to support the proposal. She was incredulous that is was disapproved.

The proposed work was needed, so a work statement for effort along these general lines was written. The RFP-competition route was taken. Of course, the Programs officer had to be very careful not to write directly to the proposal that had been disapproved. In this instance, unusual safeguards were set up to provide for fair competition. For example, the officer who took the case to the sole source board was replaced as chairperson of the review panel.

Eventually the contract was awarded the organization that presented the proposal in the first place. It was objectively determined that they did, indeed, have unique capability to perform, including the fact that previous work of the organization gave direct support and a head-start to the effort. This organization gave an impressive progress report at a professional convention in July, 1975.

Thus far, this report has ignored the grant mode of funding. In the early days, Part I funding was by grants. Increased emphasis on a certain type of competition,management, accountability, and monitoring moved the program to contracts as the funding method.

Monitoring of Part I Projects

Monitoring of Part I projects is by both Contracts and Programs personnel. At the present time, all reports and correspondence from project directors go directly to the Contracts officer. These filter down to the Project officer in the Curriculum Development Branch who is assigned to the project and, thence, to a technical specialist in the Bureau who assists in monitoring the effort. For example, reports from the American Home Economics Association on the progress of the project to develop curricula for home economics-related occupational programs will be sent to a Contracts officer. He shares these with Mr. William Berndt, the project officer, who, in turn, shares with Ms. Bertha King, O.E. specialist in home economics. All three are involved in monitoring the effort. The Project officer and the technical specialist meet with project personnel, usually at fairly regular intervals. The involvement of the technical specialist in the Part I mode is unique in the government agencies. Such involvement is significant for several reasons. The input of a technical specialist who knows the national scene in the field contributes to quality of effort. Participation in the project serves as in-service educational opportunity for the technical specialist. Further, it contributes to dissemination of information about the effort inasmuch as the technical specialist is constantly communicating with those in his or her filed throughout the country.

In the Part I program, efforts have been made to coordinate related projects and to provide in-service education for project directors. These efforts have contributed to the quality of the program. For example, directors of occupational cluster projects have met together on several occasions to share experiences and to learn from each other. They were also provided with some special training in pilot and field testing of curriculum materials.

The following sections are devoted to the major categories of the Part I program effort and recommendations for the future of the program.

DEVELOPMENT OF VOCATIONAL CURRICULA*

WITH EMPHASIS ON OCCUPATIONAL CLUSTERS

Curriculum development in 15 occupational clusters identified for vocational and technical education, was initiated in fiscal '71. By 1974, all 15 clusters had been addressed with the major objective the development of transportable curriculum guides for occupational exploration and preparation for entry occupations or for further training in occupations related to the cluster. The following table presents the distribution of Part I funds by occupational clusters, fiscal '71 - '74.

Distribution of Part I Funds by Occupational Clusters, '71 - '74.

Clusters	FY 1971	FY 1972	FY 1973	FY 1974
Agribusiness & Natural Resources	$149,913	$260,000	$ -0-	$ 94,332
Business and Office	200,000	-0-	520,314	-0-
Communications & Media	570,000	-0-	241,830	-0-
Construction	150,000	71,705	262,786	-0-
Consumer & Homemaking Education	164,383	195,724	162,144	576,280
Environment	296,236	-0-	-0-	-0-
Fine Arts & Humanities	-0-	-0-	26,109	277,588
Health	-0-	200,000	500,000	-0-
Hospitality & Recreation	103,012	-0-	-0-	277,226
Manufacturing	150,000	-0-	250,000	-0-
Marine Sciences	-0-	-0-	-0-	100,383
Marketing & Distribution	-0-	24,000	189,853	-0-
Personal Services	200,000	-0-	-0-	249,945
Public Services	150,000	-0-	229,707	499,778
Transportation	150,000	49,396	250,000	-0-

Following are descriptions of the major occupational cluster curriculum projects funded under Part I. These efforts are resulting in curriculum materials which will help to achieve the ideal of a marketable skill for each high school graduate, as well as provide a solid foundation for further occupational preparation.

* This section is adopted from: Simpson, Elizabeth J., "Cluster Curriculum Development," A Report-Seminars on Occupational Clusters, Bureau of Occupational and Adult Education, O.E., DHEW, March, 1975, pp. 27-35.

Agribusiness

The curriculum project in Agribusiness, National Resources, and Environmental Protection is designed to facilitate career awareness, orientation, exploration, and occupational preparation in these fields. Personnel from three universities , State staff members, and 32 teachers have been involved in the development of this project. Field testing of the curriculum guides resulting from the effort has been completed recently.

Major tasks of the project were:

1. To identify the major agribusiness, natural resources, and environmental protection occupations;
2. To determine the state-of-the art in this curriculum cluster;
3. To develop and validate curriculum guides; and
4. To print and disseminate copies of guide to each of the 50 states.

Business and Office

Near completion is a project to develop and validate curriculum guides to comprise an instructional system for teacher use in career development and preparation in business and office occupations, K-14. These guides, adaptable for use throughout the country, cover occupational awareness, orientation, and vocational preparation. Following a period of review and revision of existing materials and the preparation of curriculum modules, field tests were carried out in four states. Further revisions were made as the result of the field testing. In July, 1975, the project held a dissemination conference for State consultants for the business and office occupations.

Communications Media

One of the first occupational cluster curriculum projects undertaken was in the Communications Media Cluster. The major purpose is the development of curriculum guidelines for the exploration and preparation levels in the cluster.

The project was extended to permit field testing of the materials under development, as well as initial development of materials for the orientation level. Upon completion these efforts will result in a related set of career education orientation, exploration and preparation learning activities available for publication and dissemination through the Government Printing Office.

Health

The allied Health Professions Curriculum Project which covers both secondary and postsecondary levels is concerned with the development of curricula for 26 different allied health occupations. Task inventories were completed for all 26 occupations, occupational analyses on a national basis were completed for 16 occupations, and curricula and instructional materials were either completed or partially completed for seven programs. The greatest impact has been in nursing, medical records, clinical laboratory, prosthethics-orthotics, dental hygiene, and the Secondary Schools Allied Health Occupations.

Curriculum work in this area was first undertaken through Part C funding. Funding was through the now defunct National Center for Educational Research and Development. In 1972, the Allied Health projects were transfered to the Curriculum Development Branch for monitoring. Some additional funding was provided under Part I.

The basic nursing curriculum had been adopted by approximately 350 nursing education programs nationwide as of July, 1973. As of March, 1974, this figure is estimated to have doubled. Similar impact has occurred in medical records, clinical laboratory, dental hygiene, and the secondary school programs.

Hospitality, Recreation, and Tourism

The primary purpose of this project was to develop comprehensive teacher-oriented curriculum guidelines for leisure occupations at the exploration and preparation levels of the career education model. The final products comprise printed guides for use by teachers in integrating career education for leisure occupations in curriculum at grades 9 through 12. Since the field of recreation and tourism may have inherent employment attractions for the disadvantaged, handicapped and other minorities, motivational factors causing people to enter this occupational area have been assessed in a pilot study.

Dissemination of the guides has included 500 copies to the States; 4,000 copies to local education agencies; and 500 copies to colleges and universities. In fiscal '74, a second major project was funded for further work in the Hospitality, Recreation and Tourism cluster.

Consumer and Homemaking

The development of flexible teaching curriculum modules on consumer education, which can be adapted by teachers to serve a variety of learners of varying ages, socioeconomic levels, cultural backgrounds, and life styles was funded in fiscal '72. The following objectives were achieved by this project:

1. Identification and review of available curriculum materials in consumer education and a determination of gaps in the materials;

2. The development of teaching modules to supplement existing materials;

3. Field testing of modules;

4. Design and development of consumer education teaching modules which can be used by or adapted by teachers or leaders of youth organizations, teachers of pre and in-service teachers of grades 9-14 or adults, and students of any age for self-instruction; and

5. Dissemination of the curriculum modules for use in vocational-technical education programs.

More than 300 home economics, business and office, and distributive education teachers participating in the field test with some 15,000 students from a variety of socioeconomic levels and cultural backgrounds. Testing included schools and non-school learning centers and involved students in grades 9-14; adults, senior citizens, and vocational youth groups. This project resulted in a set of consumer education teaching modules, which have been printed by the Government Printing Office.

In fiscal year '74, a contract was awarded for the development of ungraded curriculum guides for home economics-related occupations in the areas of: 1) child development, family relations, and homemaker/home-health occupations, 2) clothing and textiles occupations, 3) foods and nutrition occupations, 4) home management and family economics occupations, and 5) core of knowledges and skills associated with home economics-related

occupations. In this cluster also, further work is needed in the development of curricula for the homemaking aspect of home economics in order to achieve a program more responsive to social conditions and needs.

Fine Arts and Humanities

A small grant award in fiscal '73 was for the purpose of inquiring into the relationship between the fine arts and career education. Specifically, a three-day conference was held to examine the theoretical and practical issues surrounding the arts as an occupational cluster. Twenty participants prepared papers identifying the basic educational literature on the arts; problem areas; and general guidelines for the fine arts and humanities curricula at the elementary, middle and secondary levels. Participants also analyzed a new concept, "the cultural service field," which would afford career preparation in occupations which support the fine arts, such as: art dealership, public relations ; gallery managment; set design; costuming; lighting.

Over 2,000 copies of "The Arts, Cultural Services, and Career Education" have been published in a special issue of The Journal of Aesthetic Education.

In fiscal year '74, a contract was awarded for the development of curricula for the occupational cluster of Fine Arts and Humanities. Curriculum guides are being development for occupational exploration, orientation, and preparation for the junior and senior high levels.

Construction

The purpose of the Construction cluster project which began in 1971 was to develop instructional materials to be used at the secondary level for career development for construction occupations. The instructor's guides for grades 9 and 10 and for grades 10, 11 and 12 include: behavioral objectives, suggested activities for students and instructors, sources of information, related academic theory, and examples of lesson plan development. An in-depth exploratory approach introduces the student to construction occupations in seven broad areas--wood, metal, masonry, electrical, finishing, heavy equipment operations, and engineering and support services. One guide focuses on a choice for skill development within one of the seven areas. The student's resource manual for the exploratory phase enables the student to establish a broad base of information about occupations within the construction industry from which reasonable career decisions can be made. The student's resource manual for the skill development

phase provides the basic technical information to coincide with and supplement the development of skills relevant to the specific job family within the related occupational field.

An extension of the project, funded in 1973, provided for testing the curriculum materials in a number of representative school systems; the development of materials for grades 7 and 8; development of an inservice training guide; inservice training for instructors in the pilot school; and the collection of information for use in the development of a post-secondary articulation guide covering each of the five original (first-funded under Part I) cluster areas.

Environment

Workshops and one-half day conferences with a focus on environmental occupations as a career field were held around the country. Conferees included superintendents of local school districts or their representatives. The objectives of these conferences were:

1. To develop a basic understanding of career education concepts.
2. To stimulate environmental awareness among educational personnel and subsequently students.
3. To promote quality curricular programs in the environmental portion of career education.
4. To provide a sound basis for student career choices through improved vocational guidance and career counseling information.

Each delegate attending received a completed handbook which contained a comprehensive overview of the key concepts for which the conferences were organized and a complete library of information on environmental occupations; two environmental education courses designed for high schools; and an annotated bibliography of literature, audiovisual material, and programs of ecological-environmental content.

A publication, Career Education and the Environment was printed by the Government Printing Office. Over 35,000 copies have been sold.

Marketing and Distribution

A grant was awarded for the purpose of developing an annotated bibliography of distributive education materials, to serve as one basis for curriculum decisions in the development of distributive education curricula. Personnel from seven States were involved in the review and evaluation of annotated materials, and as a result - a 695 page, two volume annotated bibliography was developed. Copies were disseminated to the 50 State departments of education, to local education agencies as requested, to every distributive education teacher and every State supervisor for distributive education.

A project begun in 1973, is designed to prepare two resource guides, for the inclusion of the marketing and distribution occupational cluster within the framework of career education. One guide provides a general conceptual framework for curriculum development in marketing and distribution. The other includes all aspects of a curriculum presentation for exploratory experiences in the middle school years. Fundamental to the development of materials for this project is the review of literature, programs, projects, and the U.S.O.E. occupational taxonomies relating to career and distributive education.

Guides in draft form were presented to a national conference of 100 educators for further inputs from the field. Field tests have been conducted in three different settings and have involved integration with other occupational exploration materials.

Manufacturing

The purpose of the Manufacturing cluster project is to develop a nationally applicable, high school level curriculum for use at grades 9 and 10, 11 and 12 in the manufacturing occupations. The project uses an integrative model which delineates manufacturing functions, processes and products and provides a useful design for teaching manufacturing at the four successive phases of career education. It represents a synthesis of vocational, industrial arts and general education and also involves working relationships between education and industry.

Teaching guides include learning activities, learning objectives, materials/media, and means of evaluation as well as guidance information. Student resource manuals are designed for the exploratory and preparation levels and provide preparation for job entry, postsecondary training, or higher education. The manuals also include means for student self-assessment.

The materials have been field tested at five sites; teaching guides and student resource materials should become available in 1975.

Public Services

The Public Service cluster project includes a national search for exemplary public service programs and instructional materials; development of teacher's guides for the four phases of career education; pilot testing of these guides; preparation of an articulation component between senior high and post secondary institutions; and the development of a "coordinator's implementation guide" for use by local school district staff.

The public service occupations cluster was divided into eight sub-clusters and a "common core" was established for content material found to be common across the full cluster. There is a set of guidelines for an exploratory program at the junior high school level as well as materials applicable to more specialized study in each of the sub-clusters. These materials have been field tested at eight locations, including California and New York and have involved nearly 5000 students. In addition, the project has established liaison channels with over 80 organizations and groups and has involved over 500 individuals from 21 states in its development and implementation.

In fiscal '74 a contract was awarded for the development of a series of films and related prin-based instructional materials on the common core materials in the Public Services curriculum development project. The films are designed for delivery by cable TV to provide occupational instruction in the home.

Personal Services

A project was funded in FY '74 for curriculum development in the Personal Services area. The purposes of this project are to determine: the state-of-the-art, specific bases for curriculum decisions in the area;

curriculum in junior and senior high school levels for occupational explor-ation and preparation; and to develop such modules as may be needed for developing awareness and training for the personal services occupations. All materials will be field tested at a minimum of three sites.

Transportation

A project funded in fiscal '73 as an extension of an existing grant, was designed to produce and validate curriculum materials, student resource manuals, a teacher's guide to career orientation in transportation, and a guide directed to the transition from K-12 to postsecondary transportation occupations education. Curriculum development of Phase II and postsecondary articulation materials was planned for January, 1973 to June, 1974. Pilot testing of Phase III and IV materials was planned for the 1973-74 and 1974-75 school years, and pilot testing of the Phase II and postsecondary materials was projected for the 1974-75 school year. The period from June, 1975 to December, 1975 will be used for revision, updating, and preparing materials for final publication through a commercial publisher.

The project has generated a great deal of interest in this new occupational cluster. Material from the teacher's guides has been adapted and used in an information booklet, "The Sky's Not the Limit for a Career in Transportation." Articles have appeared in several professional journals. A secondary and postsecondary consortium for transportation education in the San Francisco area has been formed as a direct result of this project.

Marine Sciences

In FY '74, a project was funded for the purpose of determining the state-of-the-art of marine science education and the resultant implications for future educational programs and curriculum decisions related thereto in the context of the career education theme. The general objective of this project is to develop a publication tentatively titled Career Education in Marine Science Occupations--Guidelines for Curriculum Development in Grades K-14.

Articulation of Secondary and Postsecondary Programs in Five Occupational Cluster Areas

As secondary school programs in career education become more sophisticated, articulation problems with respect to postsecondary education may become more complex. The basic purposes of this project were to identify and study the existing and potential problems of articulation between high school and post secondary career education programs and to develop suggested guidelines to solve these problems, if they occur.

Project staff members obtained information and materials concerning articulation problems and their solutions from five on-going occupational education curriculum projects and various postsecondary occupational programs in the cluster areas of construction, manufacturing, public service, transportation, and communications media. The resultant publication focusses on admissions policies for postsecondary occupational education programs; open door admissions requirements; student testing for entry level or advanced credit or placement; counseling at both secondary and postsecondary levels; student attrition rates; adult education programs; and student recruitment and job placement activities.

Impact of Cluster Curriculum Projects

Since it takes at least two years to develop and test a major curriculum package, and an additional four months or so for printing and dissemination, the impact of much of the early Part I effort is only now being felt. A number of projects recently funded are in the development and testing phases. Nevertheless, there are many evidences that the Part I Curriculum Program is contributing significantly to broadening the concept of vocational education and improving the quality of its programs--and that is the broad purpose of this program.

Beyond the occupational clusters and building on the cluster curriculum efforts there is need for specific occupational preparation curricula for both secondary and postsecondary levels. Continuous curriculum development is essential for updating and for the achievement of curricula for emerging occupations.

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